[0134] CLAIMS

1. A low dispersion interleaver assembly comprising:

a first interleaver having a plurality of birefringent elements;

a second interleaver having a plurality of birefringent elements; and

wherein the angular orientations and phase delays of the first interleaver and the second interleaver are configured so as to cooperate to provide a dispersion vs. wavelength curve wherein each dispersion value thereof is approximately opposite in value to a dispersion value at the same wavelength for the second interleaver, so as to mitigate dispersion in the interleaver assembly.

2. The low dispersion interleaver assembly as recited in claim 1, wherein the angular orientations and the phase delays of the birefringent elements are selected from the groups listed in the table:

Table III

First Stage Phase Delays	First Stage Orientations	Second Stage Phase Delays	Second Stage Orientations
$\Gamma + 2m_1\pi$, $2\Gamma + 2m_2\pi$, $2\Gamma + 2m_3\pi$	$\varphi_1, \varphi_2, \varphi_3$	$\Gamma' + 2k_1\pi$, $2\Gamma' + 2k_2\pi$, $2\Gamma' + 2k_3\pi$	$90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (parallel component) $90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (orthogonal component) where $\Gamma - \Gamma' = 2l$
$\Gamma + 2m_1\pi$, $2\Gamma + 2m_2\pi$, $2\Gamma + 2m_3\pi$	$\varphi_1, \varphi_2, \varphi_3$	$\Gamma' + 2k_1\pi$, $2\Gamma' + 2k_2\pi$, $2\Gamma' + 2k_3\pi$	$\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (parallel component) $\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (orthogonal component) where $\Gamma - \Gamma' = (2l + 1)$
$\Gamma + 2m_1\pi$, $2\Gamma + 2m_2\pi$, $2\Gamma + 2m_3\pi$	$\varphi_1, \varphi_2, \varphi_3$	$2\Gamma' + 2k_3\pi$, $2\Gamma' + 2k_2\pi$, $\Gamma' + 2k_1\pi$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $\pm\varphi_3, \pm\varphi_2, \pm\varphi_1$ (orthogonal component) where $\Gamma - \Gamma' = 2l$
$\Gamma + 2m_1\pi$, $2\Gamma + 2m_2\pi$, $2\Gamma + 2m_3\pi$	$\varphi_1, \varphi_2, \varphi_3$	$2\Gamma' + 2k_3\pi$, $2\Gamma' + 2k_2\pi$, $\Gamma' + 2k_1\pi$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $\pm\varphi_3, \pm\varphi_2, \pm\varphi_1$ (orthogonal component) where $\Gamma - \Gamma' = (2l + 1)$
$2\Gamma + 2m_3\pi$, $2\Gamma + 2m_2\pi$, $\Gamma + 2m_1\pi$	$\varphi_3, \varphi_2, \varphi_1$	$2\Gamma' + 2k_3\pi$, $2\Gamma' + 2k_2\pi$, $\Gamma' + 2k_1\pi$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (orthogonal component) where $\Gamma - \Gamma' = 2l$

First Stage Phase Delays	First Stage Orientations	Second Stage Phase Delays	Second Stage Orientations
$2\Gamma + 2m_3\,\pi$, $2\Gamma + 2m_2\,\pi$, $\Gamma + 2m_1\,\pi$	$\varphi_3, \varphi_2, \varphi_1$	$2\Gamma' + 2k_3\,\pi$, $2\Gamma' + 2k_2\,\pi$, $\Gamma' + 2k_1\,\pi$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (orthogonal component) where $\Gamma - \Gamma' = (2l + 1)$
$2\Gamma + 2m_3\,\pi$, $2\Gamma + 2m_2\,\pi$, $\Gamma + 2m_1\,\pi$	$\varphi_3, \varphi_2, \varphi_1$	$\Gamma' + 2k_1\,\pi$, $2\Gamma' + 2k_2\,\pi$, $2\Gamma' + 2k_3\,\pi$	$90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (parallel component) $\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (orthogonal component) where $\Gamma - \Gamma' = 2l$
$2\Gamma + 2m_3\,\pi$, $2\Gamma + 2m_2\,\pi$, $\Gamma + 2m_1\,\pi$	$\varphi_3, \varphi_2, \varphi_1$	$\Gamma' + 2k_1\,\pi$, $2\Gamma' + 2k_2\,\pi$, $2\Gamma' + 2k_3\,\pi$	$\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (parallel component) $90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (orthogonal component) where $\Gamma - \Gamma' = (2l + 1)$

wherein m1, m2, m3, k1, k2, k3 and l are integers (0, ±1, ±2, . . .).

3. The low dispersion interleaver assembly as recited in claim 1, wherein the angular orientations and the phase delays of the birefringent elements are selected from the groups listed in the table:

Table I

First Stage Phase Delays	First Stage Orientations	Second Stage Phase Delays	Second Stage Orientations
$\Gamma, 2\Gamma, 2\Gamma$	$\varphi_1, \varphi_2, \varphi_3$	$\Gamma, 2\Gamma, 2\Gamma$	$90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (parallel component) $90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (orthogonal component)
$2\Gamma, 2\Gamma, \Gamma$	$\varphi_3, \varphi_2, \varphi_1$	$2\Gamma, 2\Gamma, \Gamma$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (orthogonal component)
$\Gamma, 2\Gamma, 2\Gamma$	$\varphi_1, \varphi_2, \varphi_3$	$2\Gamma, 2\Gamma, \Gamma$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $\pm\varphi_3, \pm\varphi_2, \pm\varphi_1$ (orthogonal component)
$2\Gamma, 2\Gamma, \Gamma$	$\varphi_3, \varphi_2, \varphi_1$	$\Gamma, 2\Gamma, 2\Gamma$	$90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (parallel component) $\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (orthogonal component)

4. The low dispersion interleaver assembly as recited in claim 1, wherein the angular orientations and the phase delays of the birefringent elements are selected from the groups listed in the table:

Table II

First Stage Phase Delays	First Stage Orientations	Second Stage Phase Delays	Second Stage Orientations
$\Gamma + 2m_1\,\pi$, $2\Gamma + 2m_2\,\pi$, $2\Gamma + 2m_3\,\pi$	$\varphi_1, \varphi_2, \varphi_3$	$\Gamma + 2k_1\,\pi$, $2\Gamma + 2k_2\,\pi$, $2\Gamma + 2k_3\,\pi$	$90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (parallel component) $90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (orthogonal component)
$\Gamma + 2m_1\,\pi$, $2\Gamma + 2m_2\,\pi$, $2\Gamma + 2m_3\,\pi$	$\varphi_1, \varphi_2, \varphi_3$	$2\Gamma + 2k_3\,\pi$, $2\Gamma + 2k_2\,\pi$, $\Gamma + 2k_1\,\pi$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $\pm\varphi_3, \pm\varphi_2, \pm\varphi_1$ (orthogonal component)
$\Gamma + 2m_1\,\pi$, $2\Gamma + 2m_2\,\pi$, $2\Gamma + 2m_3\,\pi$	$\varphi_1, \varphi_2, \varphi_3$	$\Gamma + (2k_1 + 1)\,\pi$, $2\Gamma + 2k_2\,\pi$, $2\Gamma + 2k_3\,\pi$	$\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (parallel component) $\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (orthogonal component)
$\Gamma + 2m_1\,\pi$, $2\Gamma + 2m_2\,\pi$, $2\Gamma + 2m_3\,\pi$	$\varphi_1, \varphi_2, \varphi_3$	$2\Gamma + 2k_3\,\pi$, $2\Gamma + 2k_2\,\pi$, $\Gamma + (2k_1 + 1)\,\pi$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $\pm\varphi_3, \pm\varphi_2, \pm\varphi_1$ (orthogonal component)
$2\Gamma + 2m_3\,\pi$, $2\Gamma + 2m_2\,\pi$, $\Gamma + 2m_1\,\pi$	$\varphi_3, \varphi_2, \varphi_1$	$2\Gamma + 2k_3\,\pi$, $2\Gamma + 2k_2\,\pi$, $\Gamma + 2k_1\,\pi$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (orthogonal component)
$2\Gamma + 2m_3\,\pi$, $2\Gamma + 2m_2\,\pi$, $\Gamma + 2m_1\,\pi$	$\varphi_3, \varphi_2, \varphi_1$	$\Gamma + 2k_1\,\pi$, $2\Gamma + 2k_2\,\pi$, $2\Gamma + 2k_3\,\pi$	$90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (parallel component) $\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (orthogonal component)
$2\Gamma + 2m_3\,\pi$, $2\Gamma + 2m_2\,\pi$, $\Gamma + 2m_1\,\pi$	$\varphi_3, \varphi_2, \varphi_1$	$\Gamma + (2k_1 + 1)\,\pi$, $2\Gamma + 2k_2\,\pi$, $2\Gamma + 2k_3\,\pi$	$\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (parallel component) $90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (orthogonal component)
$2\Gamma + 2m_3\,\pi$, $2\Gamma + 2m_2\,\pi$, $\Gamma + 2m_1\,\pi$	$\varphi_3, \varphi_2, \varphi_1$	$2\Gamma + 2k_3\,\pi$, $2\Gamma + 2k_2\,\pi$, $\Gamma + (2k_1 + 1)\,\pi$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (orthogonal component)
$\Gamma + (2m_1 + 1)\,\pi$, $2\Gamma + 2m_2\,\pi$, $2\Gamma + 2m_3\,\pi$	$\varphi_1, \varphi_2, \varphi_3$	$\Gamma + 2k_1\,\pi$, $2\Gamma + 2k_2\,\pi$, $2\Gamma + 2k_3\,\pi$	$\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (parallel component) $\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (orthogonal component)
$\Gamma + (2m_1 + 1)\,\pi$, $2\Gamma + 2m_2\,\pi$, $2\Gamma + 2m_3\,\pi$	$\varphi_1, \varphi_2, \varphi_3$	$2\Gamma + 2k_3\,\pi$, $2\Gamma + 2k_2\,\pi$, $\Gamma + 2k_1\,\pi$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $\pm\varphi_3, \pm\varphi_2, \pm\varphi_1$ (orthogonal component)
$\Gamma + (2m_1 + 1)\,\pi$, $2\Gamma + 2m_2\,\pi$, $2\Gamma + 2m_3\,\pi$	$\varphi_1, \varphi_2, \varphi_3$	$\Gamma + (2k_1 + 1)\,\pi$, $2\Gamma + 2k_2\,\pi$, $2\Gamma + 2k_3\,\pi$	$90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (parallel component) $90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (orthogonal component)

First Stage Phase Delays	First Stage Orientations	Second Stage Phase Delays	Second Stage Orientations
$\Gamma+(2m_1+1)\,\pi$, $2\Gamma+2m_2\,\pi$, $2\Gamma+2m_3\,\pi$	$\varphi_1, \varphi_2, \varphi_3$	$2\Gamma+2k_3\,\pi$, $2\Gamma+2k_2\,\pi$, $\Gamma+(2k_1+1)\,\pi$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $\pm\varphi_3, \pm\varphi_2, \pm\varphi_1$ (orthogonal component)
$2\Gamma+2m_3\,\pi$, $2\Gamma+2m_2\,\pi$, $\Gamma+(2m_1+1)\,\pi$	$\varphi_3, \varphi_2, \varphi_1$	$\Gamma+2k_1\,\pi$, $2\Gamma+2k_2\,\pi$, $2\Gamma+2k_3\,\pi$	$\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (parallel component) $90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (orthogonal component)
$2\Gamma+2m_3\,\pi$, $2\Gamma+2m_2\,\pi$, $\Gamma+(2m_1+1)\,\pi$	$\varphi_3, \varphi_2, \varphi_1$	$2\Gamma+2k_3\,\pi$, $2\Gamma+2k_2\,\pi$, $\Gamma+2k_1\,\pi$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (orthogonal component)
$2\Gamma+2m_3\,\pi$, $2\Gamma+2m_2\,\pi$, $\Gamma+(2m_1+1)\,\pi$	$\varphi_3, \varphi_2, \varphi_1$	$\Gamma+(2k_1+1)\,\pi$, $2\Gamma+2k_2\,\pi$, $2\Gamma+2k_3\,\pi$	$90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (parallel component) $\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (orthogonal component)
$2\Gamma+2m_3\,\pi$, $2\Gamma+2m_2\,\pi$, $\Gamma+(2m_1+1)\,\pi$	$\varphi_3, \varphi_2, \varphi_1$	$2\Gamma+2k_3\,\pi$, $2\Gamma+2k_2\,\pi$, $\Gamma+(2k_1+1)\,\pi$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (orthogonal component)

wherein m_1, m_2, m_3, k_1, k_2, k_3 are integers (0, ±1, ±2, . . .).

5. A method for mitigating dispersion, the method comprising: transmitting light through two stages of an interleaver, wherein each stage comprises birefringent elements having angular orientations and phase delays selected from the table:

Table III

First Stage Phase Delays	First Stage Orientations	Second Stage Phase Delays	Second Stage Orientations
$\Gamma+2m_1\,\pi$, $2\Gamma+2m_2\,\pi$, $2\Gamma+2m_3\,\pi$	$\varphi_1, \varphi_2, \varphi_3$	$\Gamma'+2k_1\,\pi$, $2\Gamma'+2k_2\,\pi$, $2\Gamma'+2k_3\,\pi$	$90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (parallel component) $90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (orthogonal component) where $\Gamma-\Gamma'=2l$
$\Gamma+2m_1\,\pi$, $2\Gamma+2m_2\,\pi$, $2\Gamma+2m_3\,\pi$	$\varphi_1, \varphi_2, \varphi_3$	$\Gamma'+2k_1\,\pi$, $2\Gamma'+2k_2\,\pi$, $2\Gamma'+2k_3\,\pi$	$\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (parallel component) $\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (orthogonal component) where $\Gamma-\Gamma'=(2l+1)$
$\Gamma+2m_1\,\pi$, $2\Gamma+2m_2\,\pi$, $2\Gamma+2m_3\,\pi$	$\varphi_1, \varphi_2, \varphi_3$	$2\Gamma'+2k_3\,\pi$, $2\Gamma'+2k_2\,\pi$, $\Gamma'+2k_1\,\pi$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $\pm\varphi_3, \pm\varphi_2, \pm\varphi_1$ (orthogonal component) where $\Gamma-\Gamma'=2l$

First Stage Phase Delays	First Stage Orientations	Second Stage Phase Delays	Second Stage Orientations
$\Gamma + 2m_1\pi$, $2\Gamma + 2m_2\pi$, $2\Gamma + 2m_3\pi$	$\varphi_1, \varphi_2, \varphi_3$	$2\Gamma' + 2k_3\pi$, $2\Gamma' + 2k_2\pi$, $\Gamma' + 2k_1\pi$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $\pm\varphi_3, \pm\varphi_2, \pm\varphi_1$ (orthogonal component) where $\Gamma - \Gamma' = (2l + 1)$
$2\Gamma + 2m_3\pi$, $2\Gamma + 2m_2\pi$, $\Gamma + 2m_1\pi$	$\varphi_3, \varphi_2, \varphi_1$	$2\Gamma' + 2k_3\pi$, $2\Gamma' + 2k_2\pi$, $\Gamma' + 2k_1\pi$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (orthogonal component) where $\Gamma - \Gamma' = 2l$
$2\Gamma + 2m_3\pi$, $2\Gamma + 2m_2\pi$, $\Gamma + 2m_1\pi$	$\varphi_3, \varphi_2, \varphi_1$	$2\Gamma' + 2k_3\pi$, $2\Gamma' + 2k_2\pi$, $\Gamma' + 2k_1\pi$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (orthogonal component) where $\Gamma - \Gamma' = (2l + 1)$
$2\Gamma + 2m_3\pi$, $2\Gamma + 2m_2\pi$, $\Gamma + 2m_1\pi$	$\varphi_3, \varphi_2, \varphi_1$	$\Gamma' + 2k_1\pi$, $2\Gamma' + 2k_2\pi$, $2\Gamma' + 2k_3\pi$	$90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (parallel component) $\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (orthogonal component) where $\Gamma - \Gamma' = 2l$
$2\Gamma + 2m_3\pi$, $2\Gamma + 2m_2\pi$, $\Gamma + 2m_1\pi$	$\varphi_3, \varphi_2, \varphi_1$	$\Gamma' + 2k_1\pi$, $2\Gamma' + 2k_2\pi$, $2\Gamma' + 2k_3\pi$	$\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (parallel component) $90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (orthogonal component) where $\Gamma - \Gamma' = (2l + 1)$

wherein m_1, m_2, m_3, k_1, k_2, k_3 and l are integers $(0, \pm1, \pm2, \ldots)$.